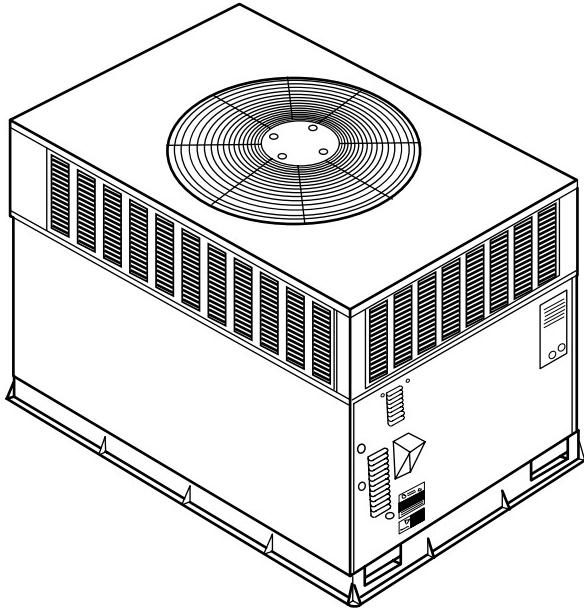




SINGLE-PACKAGE GAS HEATING/ELECTRIC COOLING UNITS

**Model 583B
Sizes 024-060**

2 to 5 Nominal Tons
Low NOx Models Available



UNIT 583B

Single-Package Rooftop Products with Energy-Saving Features and Puron® refrigerant.

- Direct Spark Ignition
- Low Sound Levels
- Up to 81% AFUE
- 12 SEER

FEATURES/BENEFITS

One-piece heating and cooling units with low sound levels, easy installation, low maintenance, and dependable performance.

Puron® Environmentally Sound Refrigerant is Bryant's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. The most important advantage of Puron refrigerant is that it has not been banned in future air conditioning systems as the traditional refrigerant R-22 has been. Puron refrigerant is in service in thousands of systems proving highly reliable, environmentally sound performance.

EASY INSTALLATION—Factory-assembled package is a compact, fully self-contained, combination gas heating/electric cooling unit that is pre-wired, pre-piped, and pre-charged for minimum installation expense.

These units are available in a variety of standard and optional heating/cooling size combinations with voltage options to meet residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite basepan eliminates rust problems associated with ground level applications.

CONVERTIBLE DUCT CONFIGURATION—Unit is designed for easy use in either downflow or horizontal applications. Each unit is easily converted from horizontal to downflow.

EFFICIENT OPERATION

High-efficiency design offers SEER (Seasonal Energy Efficiency Ratios) of 12.0 and AFUE (Annual Fuel Utilization Efficiency) ratings as high as 81%.

Energy-saving, direct spark ignition saves gas by operating only when the room thermostat calls for heating. Standard units are furnished with natural gas controls. A low-cost field-installed kit for propane conversion is available for all units.

583B units with an "N" in the thirteenth position of model # are dedicated Low NOx units designed for California installations. These models meet the California maximum oxides of nitrogen (NOx) emissions requirement of 40 nanograms/joule or less as shipped from the factory and MUST be installed in California Air Quality Management Districts where a Low NOx rule exists.

DURABLE, DEPENDABLE COMPONENTS

Compressors are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

Monoport inshot burners produce precise air-to-gas mixture, which provides for clean and efficient combustion. The large monoport on the inshot (or injection type) burners seldom, if ever, requires cleaning. All gas furnace components are accessible in one compartment.

Turbo-tubular™ heat exchangers are constructed of aluminized steel for corrosion resistance and optimum heat transfer for improved efficiency. The tubular design permits hot gases to make multiple passes across the path of the supply air.

In addition, dimples located on the heat exchanger walls force the hot gases to stay in close contact with the walls, improving heat transfer.

Direct-drive multi-speed, PSC (permanent split capacitor) blower motor is standard on all 583B models.

Direct-drive, PSC condenser-fan motors are designed to help reduce energy consumption and provide for cooling operation down to 40°F outdoor temperature. Motormaster® II low ambient kit is available as a field-installed accessory.

Corporate thermostats include the Time Guard® II anti-short cycle protection circuitry. If a non-corporate thermostat is used the Time Guard II field installed anti-short cycle kit must be used.

Refrigerant system is designed to provide dependability. Liquid filter dryers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full refrigerant charge. Refrigerant service connections make checking operating pressures easier.

HIGH AND LOW PRESSURE SWITCHES

Evaporator and condenser coils are computer-designed for optimum heat transfer and cooling efficiency. The evaporator coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The condenser coil is internally mounted on the top tier of the unit. Copper fin coils and pre-coated fin coils are available from the factory by special order. These coils are recommended in applications where aluminum fins are likely to be damaged due to corrosion. They are ideal for seacoast applications.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 72 dB. (See page 3.)

Easy to service cabinets provide easy single-panel accessibility to serviceable components during maintenance and installation. The basepan with integrated drain pan provides easy ground level installation with or without a mounting pad. Convenient handholds are provided to manipulate the unit on the jobsite. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. wide perimeter flange makes frame mounting on a roof-top easy.

Downflow operation is easily provided in the field to allow vertical ductwork connections. The basepan utilizes knockout style seals on the bottom openings to ensure a positive seal in the horizontal airflow mode.

Integrated Gas Control (IGC) board provides safe and efficient control of heating and simplifies trouble-shooting through its built-in diagnostic function.

Cabinets are constructed of heavy-duty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hours in

salt spray. Interior surfaces of the evaporator/heat exchanger compartment are insulated with cleanable semi-rigid insulation board, which keeps the conditioned air from being affected by the outdoor ambient temperature and provides improved indoor air quality. (Conforms to American Society of Heating, Refrigeration and Air Conditioning Engineers No. 62P.) The sloped drain pan minimizes standing water in the drain, which is provided with an external drain.

Louvered Grille provides hail and vandalism protection.

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MODEL NUMBER NOMENCLATURE

| | | | | |
|--|--|--|---|--|
| Model Number 583B – Single Package Gas Heating/ Electric Cooling | Electrical Supply J – 208/230-1-60 P – 208/230-3-60 E – 460-3-60 | Fuel and Controls W – Natural Gas P – Propane Gas | Nominal Cooling Capacity 024 – 2.0 Tons 030 – 2.5 Tons 036 – 3.0 Tons 042 – 3.5 Tons 048 – 4.0 Tons 060 – 5.0 Tons | Indoor Motor - Horse Power (Not an option) D – 1/4 Direct Drive F – 1/2 Direct Drive G – 3/4 Direct Drive and Aba |
| | | | | Options A – Louvered Grille J – Louvered Grille, AL Evaporator and Vinyl-Coated Condenser Coil Fin L – Louvered Grille, AL Evaporator and CU Condenser Coil M – Louvered Grille, CU Evaporator and CU Condenser Coils |
| | | | | Series A – Original |
| | | | | Low No_x Indicator A – Std. Unit N – Low No _x Unit |

LEGEND

CU — Copper
AL — Aluminum

ARI* CAPACITIES COOLING CAPACITIES AND EFFICIENCIES

| UNIT 583B | NOMINAL TONS | STANDARD CFM | NET COOLING CAPACITIES (Btuh) | SEER† | SOUND RATINGS** (dB) |
|----------------------------|--------------|--------------|-------------------------------|-------|----------------------|
| 024040 024060 | 2 | 800 | 24,000 | 12.0 | 72 |
| 030040 036060 | 2-1/2 | 1000 | 29,000 | 12.0 | 72 |
| 036060 036090 | 3 | 1200 | 35,000 | 12.0 | 72 |
| 042060 042090 | 3-1/2 | 1400 | 41,000 | 12.0 | 73 |
| 048090 048115 048130 | 4 | 1600 | 48,000 | 12.0 | 78 |
| 060090 060115 060130 | 5 | 1750 | 59,000 | 12.0 | 76 |

LEGEND

dB — Decibels
db — Dry Bulb
SEER — Seasonal Energy Efficiency Ratio
wb — Wet Bulb

* Air Conditioning & Refrigeration Institute.

† Rated in accordance with U.S. Government DOE (Department of Energy) test procedures and/or ARI Standard 210/240-89.

** Tested in accordance with ARI Standard 270-95 (not listed in ARI).

NOTES:

- Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80°F db, 67°F wb indoor entering-air temperature and 95°F db outdoor entering-air temperature.
- Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

ARI* CAPACITIES (cont)
HEATING CAPACITIES AND EFFICIENCIES

| UNIT 583B | HEATING INPUT (Btuh) | OUTPUT CAPACITY (Btuh) | TEMPERATURE RISE RANGE (°F) | AFUE |
|--------------------------------------|--------------------------------------|---------------------------|--------------------------------|------|
| 024040 030040 | 40,000 | 31,000 | 20-50 | 80.1 |
| 024060 030060 036060 042060 | 60,000 | 46,000 | 35-65 | 78.4 |
| | | 46,000 | 35-65 | 78.4 |
| | | 46,000 | 25-55 | 78.7 |
| | | 47,000 | 20-50 | 78.7 |
| 036090 042090 048090 060090 | 88,000 90,000 90,000 90,000 | 70,000 | 45-75 | 79.9 |
| | | 71,000 | 35-65 | 79.9 |
| | | 70,000 | 25-55 | 78.6 |
| | | 70,000 | 25-55 | 78.6 |
| 048115 060115 | 115,000 | 92,000 | 35-65 | 81.1 |
| 048130 060130 | 130,000 | 104,000 | 40-70 | 80.3 |
| | | 103,000 | | |

LEGEND

AFUE — Annual Fuel Utilization Efficiency

NOTE: Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.



OUTDOOR SOUND: OCTAVE BAND DATA — DECIBELS (Lw(A))

| UNIT | 583B | | | | | |
|------|------|------|------|------|------|------|
| | 024 | 030 | 036 | 042 | 048 | 060 |
| 63 | 44.8 | 48.0 | 50.0 | 49.1 | 51.4 | 53.7 |
| 125 | 60.4 | 58.2 | 60.4 | 63.9 | 65.2 | 62.6 |
| 250 | 58.3 | 59.2 | 61.6 | 65.2 | 69.7 | 65.9 |
| 500 | 64.8 | 65.8 | 66.9 | 67.9 | 72.7 | 70.6 |
| 1000 | 66.9 | 67.7 | 67.8 | 66.7 | 72.9 | 71.6 |
| 2000 | 64.3 | 64.8 | 64.6 | 63.8 | 69.8 | 68.2 |
| 4000 | 59.8 | 61.8 | 60.7 | 60.2 | 65.8 | 65.8 |
| 8000 | 51.8 | 53.6 | 52.8 | 50.7 | 57.9 | 58.3 |

Bels — Sound Levels (1 bel = 10 decibels)

PHYSICAL DATA

| UNIT SIZE 583B | 024040 | 024060 | 030040 | 030060 | 036060 | 036090 | 042060 | 042090 |
|---|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| NOMINAL CAPACITY (ton) | 2 | 2 | 2-1/2 | 2-1/2 | 3 | 3 | 3-1/2 | 3-1/2 |
| OPERATING WEIGHT (lb) | 290 | 290 | 313 | 313 | 321 | 321 | 382 | 382 |
| COMPRESSORS | | | | | | | | |
| Quantity | 1 | | | | | | | |
| REFRIGERANT (R-410A) | | | | | | | | |
| Quantity (lb) | 5.0 | 5.0 | 5.5 | 5.5 | 6.9 | 6.9 | 9.0 | 9.0 |
| REFRIGERANT METERING DEVICE | | | | | | | | |
| Orifice ID (in.) AccuRater® Piston | .057 | .057 | .057 | .057 | .065 | .065 | .070 | .070 |
| CONDENSER COIL | | | | | | | | |
| Rows—Fins/in. Face Area (sq ft) | 1/17 10.9 | 1/17 10.9 | 1/17 12.7 | 1/17 12.7 | 2/17 9.1 | 2/17 9.1 | 2/17 12.3 | 2/17 12.3 |
| CONDENSER FAN | | | | | | | | |
| Nominal Cfm Diameter (in.) Motor Hp (Rpm) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) | 2350 22 1/8 (825) |
| EVAPORATOR COIL | | | | | | | | |
| Rows—fins/in. Face Area (sq ft) | 3/15 3.7 | 3/15 3.7 | 3/15 3.7 | 3/15 3.7 | 3/15 3.7 | 3/15 3.7 | 3/15 4.7 | 3/15 4.7 |
| EVAPORATOR BLOWER | | | | | | | | |
| Nominal Airflow (Cfm) Size (in.) Motor Hp (Rpm) | 800 10 x 10 1/4 (1075) | 800 10 x 10 1/4 (1075) | 1000 10 x 10 1/4 (1075) | 1000 10 x 10 1/4 (1075) | 1200 10 x 10 1/2 (1075) | 1200 10 x 10 1/2 (1075) | 1400 11 x 10 3/4 (1075) | 1400 11 x 10 3/4 (1075) |
| FURNACE SECTION | | | | | | | | |
| Burner Orifice No. (Qty...Drill Size) Natural | 2...44 | 2...38 | 2...44 | 2...38 | 2...38 | 3...38 | 2...38 | 3...38 |
| Burner Orifice No. (Qty...Drill Size) Propane | 2...50 | 2...46 | 2...50 | 2...46 | 2...46 | 3...46 | 2...46 | 3...46 |
| HIGH-PRESSURE SWITCH (psig) | | | | | | | | |
| Cutout Reset (Auto.) | 610 ± 15 420 ± 25 | | | | | | | |
| LOSS-OF-CHARGE/LOW-PRESSURE SWITCH | | | | | | | | |
| (Liquid Line) (psig) Cutout Reset (Auto.) | 20 ± 5 45 ± 10 | | | | | | | |
| RETURN-AIR FILTERS (in.) | | | | | | | | |
| Throwaway | 20 x 24 x 1 | 20 x 24 x 1 | 20 x 24 x 1 | 20 x 24 x 1 | 20 x 24 x 1 | 20 x 24 x 1 | 24 x 30 x 1 | 24 x 30 x 1 |

PHYSICAL DATA (cont)

| UNIT SIZE 583B | 048090 | 048115 | 048130 | 060090 | 060115 | 060130 |
|--|----------------------|-------------|-------------|-------------|-------------|-------------|
| NOMINAL CAPACITY (ton) | 4 | 4 | 4 | 5 | 5 | 5 |
| OPERATING WEIGHT (lb) | 421 | 421 | 421 | 468 | 468 | 468 |
| COMPRESSORS | Scroll | | | | | |
| Quantity | 1 | | | | | |
| REFRIGERANT (R-410A) | | | | | | |
| Quantity (lb) | 9.5 | 9.5 | 9.5 | 10.0 | 10.0 | 10.0 |
| REFRIGERANT METERING DEVICE | | | | | | |
| Orifice ID (in.) AccuRater® Piston | .073 | .073 | .073 | .086 | .086 | .086 |
| CONDENSER COIL | | | | | | |
| Rows—Fins/in. | 2/17 | 2/17 | 2/17 | 2/17 | 2/17 | 2/17 |
| Face Area (sq ft) | 12.3 | 12.3 | 12.3 | 16.4 | 16.4 | 16.4 |
| CONDENSER FAN | | | | | | |
| Nominal Cfm | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 |
| Diameter (in.) | 22 | 22 | 22 | 22 | 22 | 22 |
| Motor Hp (Rpm) | 1/4 (1100) | 1/4 (1100) | 1/4 (1100) | 1/4 (1100) | 1/4 (1100) | 1/4 (1100) |
| EVAPORATOR COIL | | | | | | |
| Rows—fins/in. | 4/15 | 4/15 | 4/15 | 4/15 | 4/15 | 4/15 |
| Face Area (sq ft) | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| EVAPORATOR BLOWER | | | | | | |
| Nominal Airflow (Cfm) | 1600 | 1600 | 1600 | 1750 | 1750 | 1750 |
| Size (in.) | 11 x 10 | 11 x 10 | 11 x 10 | 11 x 10 | 11 x 10 | 11 x 10 |
| Motor Hp (Rpm) | 3/4 (1075) | 3/4 (1075) | 3/4 (1075) | 1.0 (1040) | 1.0 (1040) | 1.0 (1040) |
| FURNACE SECTION | | | | | | |
| Burner Orifice No. (Qty...Drill Size) Natural Gas | 3...38 | 3...33 | 3...31 | 3...38 | 3...33 | 3...31 |
| Burner Orifice No. (Qty...Drill Size) Propane Gas | 3...46 | 3...42 | 3...41 | 3...46 | 3...42 | 3...41 |
| HIGH-PRESSURE SWITCH (psig) | | | | | | |
| Cutout Reset (Auto.) | 610 ± 15 420 ± 25 | | | | | |
| LOSS-OF-CHARGE/LOW-PRESSURE SWITCH | | | | | | |
| (Liquid Line) (psig) Cutout Reset (Auto.) | 20 ± 5 45 ± 10 | | | | | |
| RETURN-AIR FILTERS (in.) | | | | | | |
| Throwaway | 24 x 30 x 1 | 24 x 30 x 1 | 24 x 30 x 1 | 24 x 30 x 1 | 24 x 30 x 1 | 24 x 30 x 1 |

OPTIONS AND ACCESSORIES

Factory-installed options

Coil options include copper/copper and vinyl-coated construction for refrigerant coils. Units are shipped standard with copper tube/aluminum fin construction. See model number nomenclature for coil options.

Field-installed accessories

| |
|--|
| Economizer with Solid-State Controls and Barometric Relief Dampers |
| Manual Air Damper (25% open) |
| Filter Rack |
| Roof Curbs (8-in. and 14-in.) |
| Square-to-Round Duct Transition Kit |
| Thermostats |
| Crankcase Heater |
| Compressor Hard Start Kit (for use on single-phase units only) |
| LP Conversion Kit |
| High Altitude Kit |
| Low Ambient Kit (Motormaster® II Control) |
| Solid-State Time Guard® II Device |
| Rigging Kit |

Economizer with solid-state controls and barometric relief dampers includes filter racks and provide outdoor air during cooling and reduce compressor operation.

Manual outside air damper includes hood and filter rack with adjustable damper blade for up to 25% outdoor air.

Flat roof curbs in both 8 in. and 14 in. sizes are available for roof mounted applications.

Square-to-round duct transition kit enables 024-048 size units to be fitted to 14 in. round ductwork.

Compressor hard start kit assists compressor start-up by providing additional starting torque on single phase units and prolongs compressor motor life.

Thermostats provide control for the system heating and cooling functions. Thermostat models are available in both programmable and non-programmable versions.

Crankcase heater provides anti-floodback protection for low-load cooling applications.

LP (liquid propane) conversion kit allows for conversion from natural gas to liquid propane fuel.

Low-ambient kit (Motormaster® II control) allows the use of mechanical cooling down to outdoor temperatures as low as 0°F.

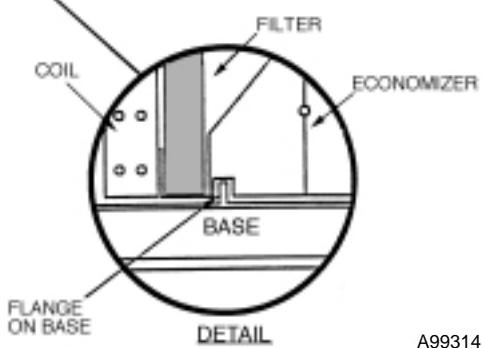
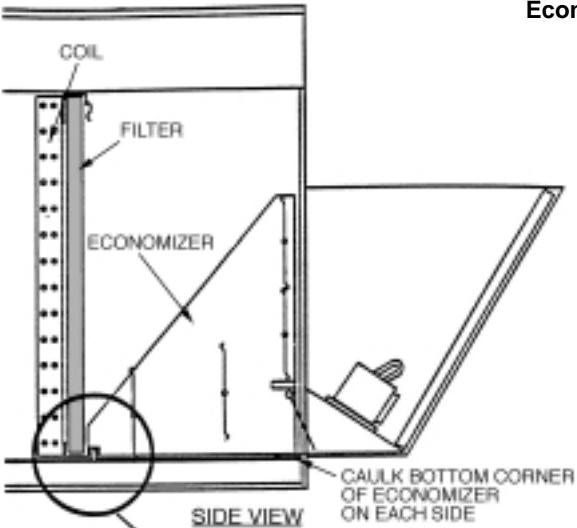
Solid-state Time Guard® II device provides short-cycling protection for the compressor. Not required with corporate electronic thermostats.

Filter rack features easy installation, serviceability, and high-filtering performance for vertical applications.

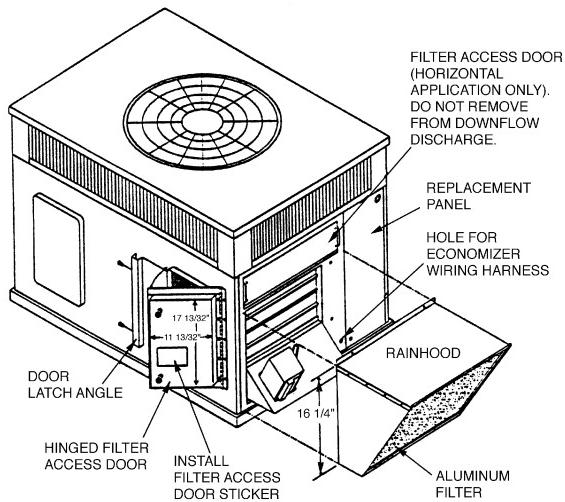
High altitude kit is for use at 2001 to 6000 ft above sea level. Kit consists of natural gas orifices that compensate for gas heat operation at high altitude.

Rigging kit includes lifting brackets which are inserted into the basepan handholds to rig unit for rooftop applications.

Economizer

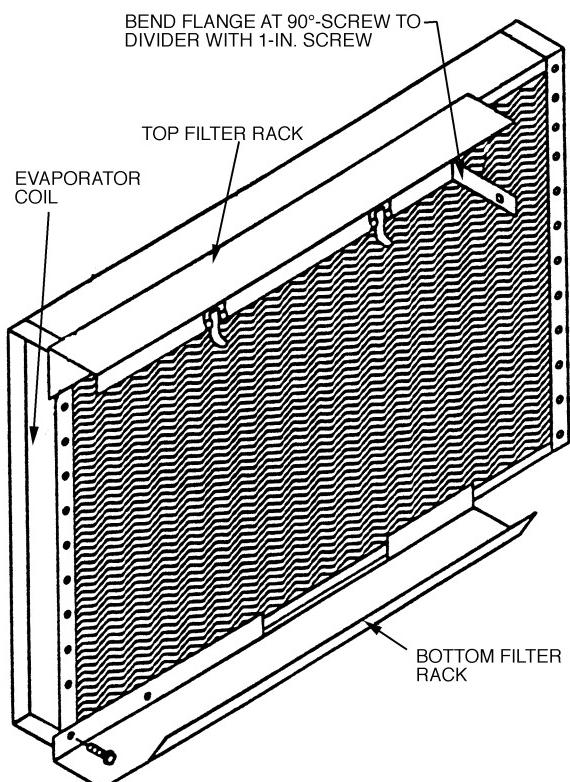


A99314



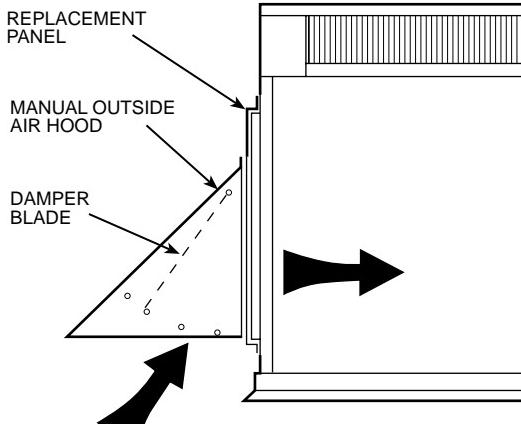
A99315

Filter Rack



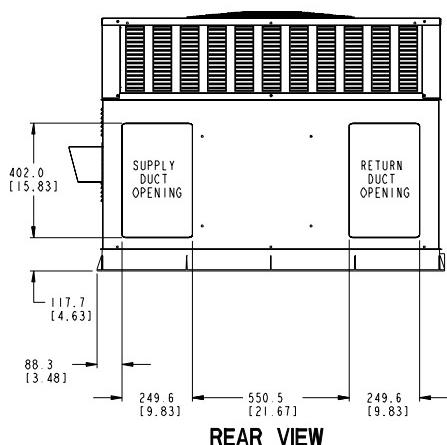
A99316

Manual Outside Air Damper

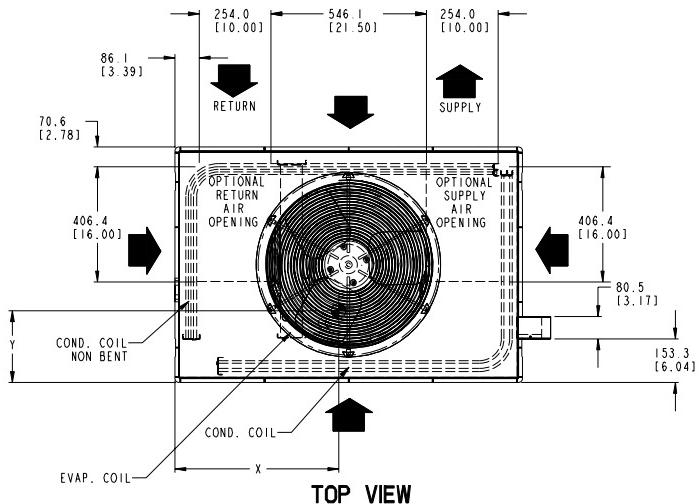


A99317

BASE UNIT DIMENSIONS — 583B024-036



REAR VIEW



TOP VIEW

REQ'D CLEARANCES FOR OPERATION AND SERVICING. in. (mm)

| | |
|--|-------------|
| Evaporator coil access side | 36 (914) |
| Power entry side (except for NEC requirements) | 36 (914) |
| Unit top | 48 (1219) |
| Side opposite ducts | 36 (914) |
| Duct panel | 12 (304.8)* |

*Minimum distances: If unit is placed less than 12 in. (304.8 mm) from wall system, then the system performance may be compromised.

LEGEND

- CG - Center of Gravity
- COND - Condenser
- EVAP - Evaporator
- NEC - National Electrical Code
- REQ'D - Required

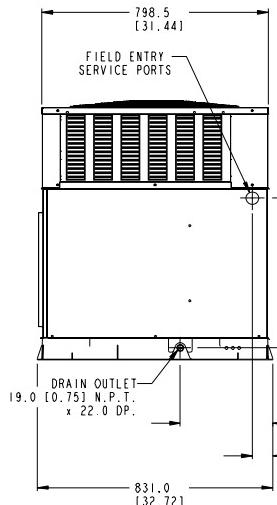
Note: Dimensions are in in. (mm)

REQ'D CLEARANCES TO COMBUSTIBLE MAT'L. in. (mm)

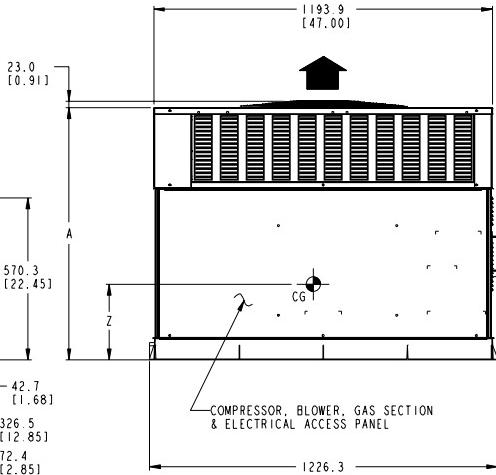
| | |
|---------------------|-------------|
| Top of unit | 14 (355.6) |
| Duct side of unit | 2 (50.8) |
| Side opposite ducts | 14 (355.6) |
| Bottom of unit | 0.50 (12.7) |
| Flue panel | 36 (914.4) |

NEC REQ'D CLEARANCES. in. (mm)

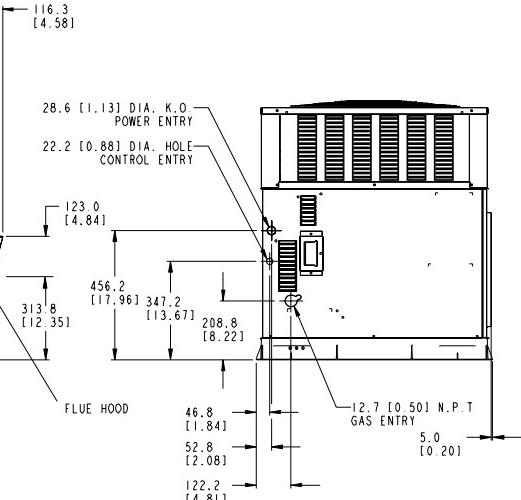
| | |
|--|-------------|
| Between units, power entry side | 42 (1066.8) |
| Unit and ungrounded surfaces, power entry side | 36 (914) |
| Unit and block or concrete walls and other grounded surfaces, control box side | 42 (1066.8) |



LEFT SIDE VIEW



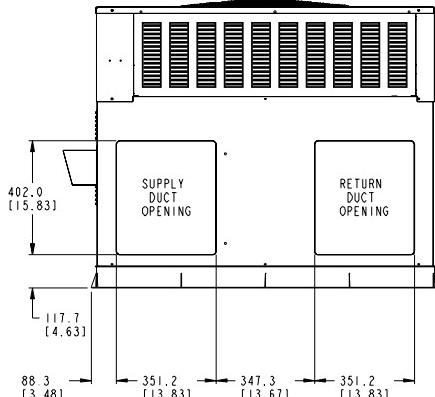
FRONT VIEW



RIGHT SIDE VIEW

| UNIT | ELECTRICAL CHARACTERISTICS | UNIT WEIGHT | | UNIT HEIGHT IN. [MM] "A" | CENTER OF GRAVITY IN. [MM] | | |
|----------------|--|-------------|-------|-----------------------------|----------------------------|--------------|--------------|
| | | lb. | kg. | | X | Y | Z |
| 583B024040/060 | 208/230-1-60 | 290 | 131.5 | 37.02 [940.3] | 22.0 [558.8] | 14.5 [368.3] | 16.0 [406.4] |
| 583B030040/060 | 208/230-1-60 208/230-3-60 | 313 | 142.0 | 39.02 [991.1] | 22.0 [558.8] | 15.3 [387.4] | 17.6 [447.0] |
| 583B036060/090 | 208/230-1-60 208/230-3-60 460-3-60 | 321 | 145.6 | 35.02 [889.5] | 22.0 [558.8] | 15.3 [387.4] | 16.5 [419.1] |

BASE UNIT DIMENSIONS – 583B042-060

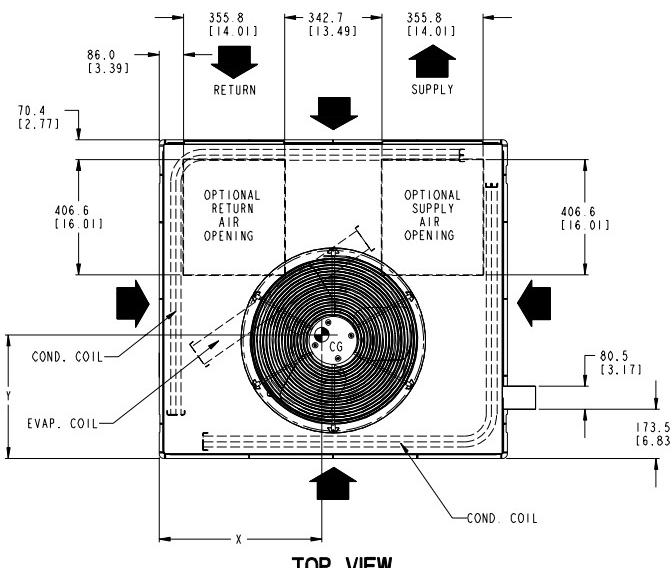


REAR VIEW

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

| | in. [mm] |
|-------------------------------|---------------|
| EVAP. COIL ACCESS SIDE..... | 36.00 [914.0] |
| POWER ENTRY SIDE..... | 36.00 [914.0] |
| (EXCEPT FOR NEC REQUIREMENTS) | |
| UNIT TOP | 36.00 [914.0] |
| SIDE OPPOSITE DUCTS | 36.00 [914.0] |
| DUCT PANEL | 12.00 [304.8] |

***MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12.00 in. [304.8 mm.] FROM WALL THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.**



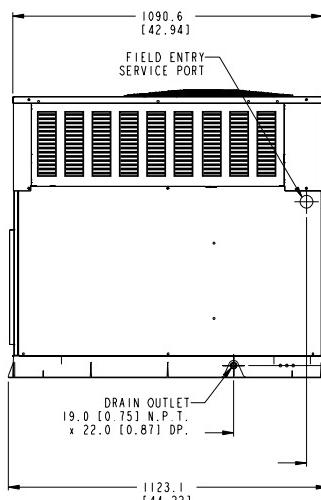
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REQUIRED CLEARANCE TO COMBUSTIBLE MATL.

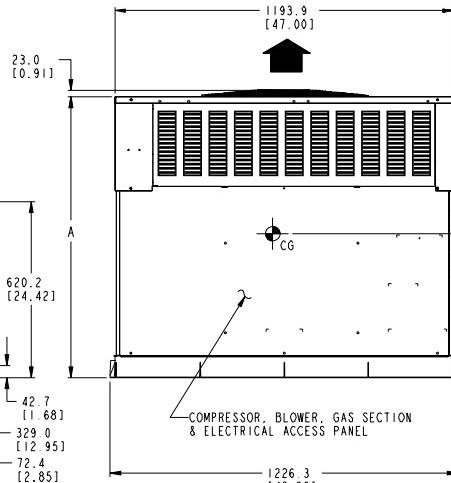
| | in. [mm] |
|--------------------------|---------------|
| TOP OF UNIT..... | 14.00 [355.6] |
| DUCT SIDE OF UNIT..... | 2.00 [50.8] |
| SIDE OPPOSITE DUCTS..... | 14.00 [355.6] |
| BOTTOM OF UNIT..... | 0.50 [12.7] |
| ELECTRIC HEAT PANEL..... | 36.00 [914.4] |

NEC. REQUIRED CLEARANCES.

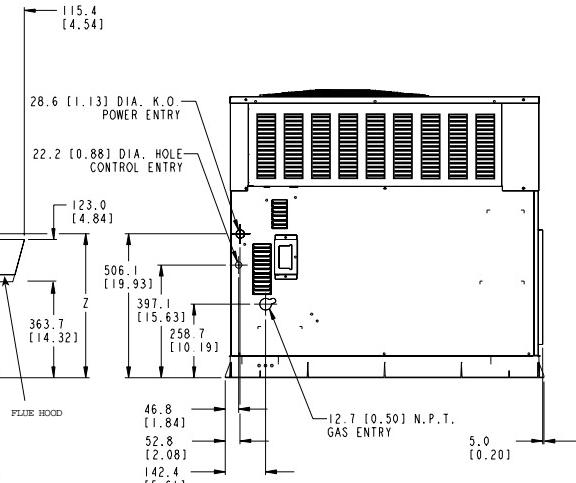
| | MILLIMETERS [IN.] |
|---|-------------------|
| BETWEEN UNITS, POWER ENTRY SIDE | 42.00 [1066.8] |
| UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE | 36.00 [914.0] |
| UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE | 42.00 [1066.8] |



(44-22)



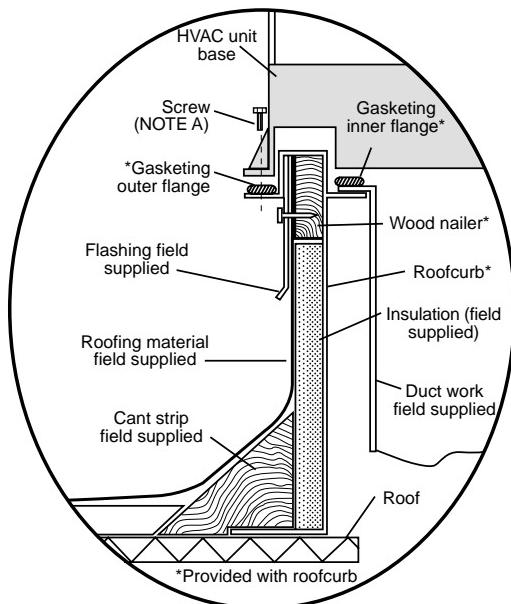
FRONT VIEW



RIGHT SIDE VIEW

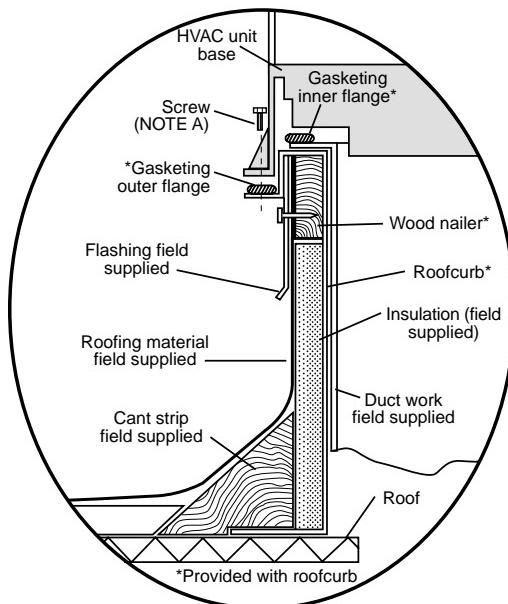
| UNIT | ELECTRICAL CHARACTERISTICS | UNIT WEIGHT | | UNIT HEIGHT IN. [MM] "A" | CENTER OF GRAVITY IN. [MM] | | |
|--------------------|--|-------------|-------|--------------------------------|-------------------------------|--------------|--------------|
| | | lb. | kg. | | X | Y | Z |
| 583B042060/090 | 208/230-1-60 208/230-3-60 460-3-60 | 382 | 173.3 | 38.98 [990.2] | 23.0 [584.2] | 16.3 [412.8] | 16.6 [421.6] |
| 583B048090/115/130 | 208/230-1-60 208/230-3-60 460-3-60 | 421 | 191.0 | 38.98 [990.2] | 21.5 [546.1] | 16.6 [422.1] | 18.0 [457.2] |
| 583B060090/115/130 | 208/230-1-60, 208/230-3-60, 460-3-60 | 468 | 212.3 | 42.98 [1091.7] | 23.5 [596.9] | 16.3 [412.8] | 17.6 [447.0] |

ACCESSORY DIMENSIONS



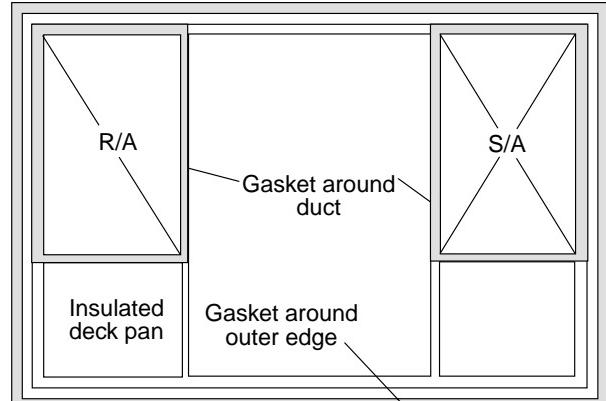
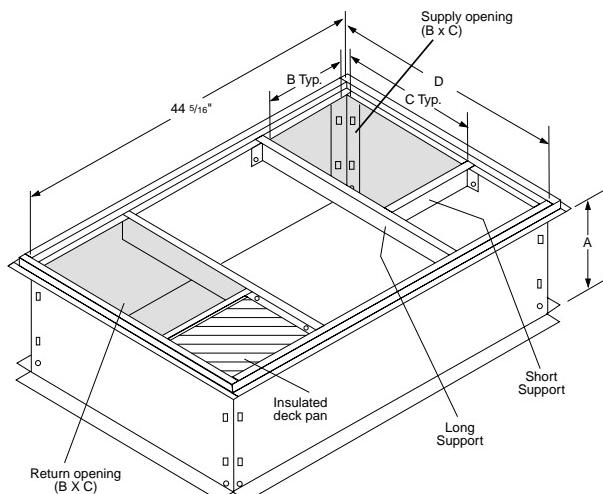
Roof Curb for Small Cabinet

Note A: When unit mounting screw is used, retainer bracket must also be used.



Roof Curb for Large Cabinet

Note A: When unit mounting screw is used, retainer bracket must also be used.



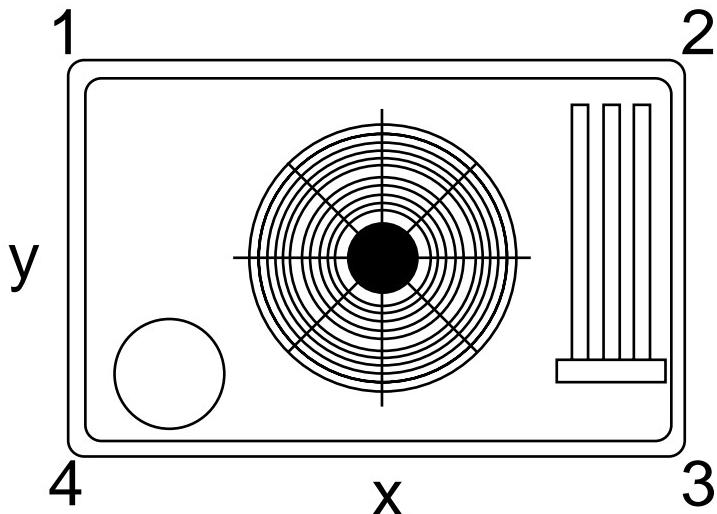
**Roof Curb Dimensions
Side View**

| ROOF CURB | UNIT SIZE | ODS ORDER NUMBER | A IN. [MM] | B IN. [MM] | C IN. [MM] | D IN. [MM] |
|-----------|-----------|------------------|---------------|---------------|---------------|---------------|
| | 024-036 | CPRFCURB006A00 | 8 [203] | 11 [279] | 16 1/2 [419] | 28 3/4 [730] |
| 042-060 | | CPRFCURB007A00 | 14 [356] | 11 [279] | 16 1/2 [419] | 28 3/4 [730] |
| | | CPRFCURB008A00 | 8 [203] | 16 3/16 [411] | 17 3/8 [441] | 40 1/4 [1022] |
| | | CPRFCURB009A00 | 14 [356] | 16 3/16 [411] | 17 3/8 [441] | 40 1/4 [1022] |

Notes:

1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied as required to unit being installed.
3. Dimensions in [] are in millimeters.
4. Roof curb is made of 16 gage steel.
5. Table lists only the dimensions per part number that have changed.
6. Attach ductwork to curb (flanges of duct rest on curb).
7. Insulated panels: 1-in. thick fiberglass 1 lb. density.
8. Dimensions are in inches.

583B CORNER WEIGHTS



| CORNER # | 024 | 030 | 036 | 042 | 048 | 060 |
|---------------------|------------|------------|------------|------------|------------|------------|
| 1 | 55.1 | 59.5 | 61.0 | 72.6 | 80.0 | 88.9 |
| 2 | 52.2 | 56.3 | 57.8 | 68.8 | 75.8 | 84.2 |
| 3 | 89.9 | 97.0 | 99.5 | 118.4 | 130.5 | 145.1 |
| 4 | 92.8 | 100.2 | 102.7 | 122.2 | 134.7 | 149.8 |
| TOTAL WEIGHT | 290 | 313 | 321 | 382 | 421 | 468 |

SELECTION PROCEDURE (WITH EXAMPLE)

I DETERMINE COOLING AND HEATING REQUIREMENTS AT DESIGN CONDITIONS:

Given:

Required Cooling Capacity (TC).....35,000 Btuh
 Sensible Heat Capacity (SHC).....25,000 Btuh
 Required Heating Capacity.....60,000 Btuh
 Condenser Entering Air Temperature.....95°F
 Indoor-Air Temperature80°F edb 67°F ewb
 Evaporator Air Quantity1200 CFM
 External Static Pressure.....0.1 in. wg
 Electrical Characteristics.....208-1-60

II SELECT UNIT BASED ON REQUIRED COOLING CAPACITY.

Enter Net Cooling Capacities table at condenser entering temperature of 95 F. Unit 583B036 at 1200 cfm and 67 F ewb (entering wet bulb) will provide a total capacity of 35,900 Btuh and a SHC of 26,700 Btuh. Calculate SHC correction, if required, using Note 3 under Cooling Capacities tables.

III SELECT HEATING CAPACITY OF UNIT TO PROVIDE DESIGN CONDITION REQUIREMENT.

In the Heating Capacities and Efficiencies table on page 4, note that the unit 583B036090 will provide 70,000 Btuh with an input of 88,000 Btuh.

IV DETERMINE FAN SPEED AND POWER REQUIREMENTS AT DESIGN CONDITIONS.

Before entering the air delivery tables, calculate the total static pressure required. From the *given* example, the Wet Coil Pressure Drop Table, and the Filter Pressure Drop table on page 16, find at 1200 cfm:

| | |
|--------------------------|-------------|
| External Static Pressure | 0.1 in. wg |
| Filter | 0.13 in. wg |
| Total Static Pressure | 0.23 in. wg |

Enter the table for Wet Coil Air Delivery — Horizontal and Downflow Discharge on page 16. For 208 v operation, deduct 10% from value given. At .23 ESP (external static pressure), the fan will deliver 1449 cfm at medium speed. The fan speed should be set at medium speed.

V SELECT UNIT THAT CORRESPONDS TO POWER SOURCE AVAILABLE.

The Electrical Data table on page 20 shows that the unit is designed to operate at 208-1-60.

PERFORMANCE DATA

COOLING CAPACITIES

| 583B024 COOLING PERFORMANCE TABLE | | | | | | | | | | |
|--|-----|---------------------------|------|------|------------|------|------|-------------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM / BF | | | | | | | | |
| | | 600 / 0.08 | | | 800 / 0.10 | | | 1000 / 0.12 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | |
| | | 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 |
| 75 | TC | 23.7 | 26.0 | 28.1 | 24.7 | 26.9 | 28.7 | 25.2 | 26.9 | 28.7 |
| | SHC | 19.6 | 16.8 | 13.9 | 22.3 | 18.6 | 14.5 | 24.4 | 19.7 | 14.9 |
| | kW | 1.74 | 1.76 | 1.78 | 1.88 | 1.90 | 1.91 | 2.04 | 2.09 | 2.11 |
| 85 | TC | 22.4 | 25.0 | 27.2 | 23.6 | 25.8 | 27.7 | 24.1 | 25.9 | 27.5 |
| | SHC | 18.9 | 16.3 | 13.4 | 21.8 | 18.2 | 14.2 | 24.1 | 19.4 | 14.6 |
| | kW | 1.91 | 1.96 | 1.97 | 2.07 | 2.09 | 2.11 | 2.22 | 2.29 | 2.30 |
| 95 | TC | 21.2 | 23.7 | 26.2 | 22.3 | 24.6 | 26.7 | 23.0 | 24.7 | 26.4 |
| | SHC | 18.4 | 15.8 | 13.0 | 21.1 | 17.7 | 13.8 | 23.0 | 19.0 | 14.1 |
| | kW | 2.11 | 2.17 | 2.21 | 2.25 | 2.31 | 2.35 | 2.40 | 2.52 | 2.52 |
| 105 | TC | 19.1 | 21.5 | 23.8 | 20.1 | 22.3 | 24.2 | 21.0 | 22.3 | 24.1 |
| | SHC | 17.1 | 14.6 | 12.0 | 19.5 | 16.4 | 12.8 | 21.0 | 17.8 | 13.1 |
| | kW | 2.37 | 2.45 | 2.47 | 2.52 | 2.61 | 2.61 | 2.68 | 2.81 | 2.81 |
| 115 | TC | 16.9 | 19.3 | 21.8 | 18.2 | 20.0 | 22.3 | 19.2 | 20.1 | 22.1 |
| | SHC | 15.9 | 13.5 | 11.1 | 18.2 | 15.4 | 11.9 | 19.2 | 16.8 | 12.6 |
| | kW | 2.73 | 2.82 | 2.89 | 2.88 | 3.01 | 3.02 | 3.07 | 3.21 | 3.23 |
| 125 | TC | 14.7 | 16.8 | 19.2 | 16.1 | 17.4 | 19.6 | 16.9 | 17.5 | 19.4 |
| | SHC | 14.7 | 12.5 | 10.2 | 16.1 | 14.2 | 11.1 | 16.9 | 15.7 | 11.6 |
| | kW | 3.16 | 3.28 | 3.38 | 3.34 | 3.46 | 3.51 | 3.54 | 3.68 | 3.72 |

| 583B030 COOLING PERFORMANCE TABLE | | | | | | | | | | |
|--|-----|---------------------------|------|------|-------------|------|------|-------------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM / BF | | | | | | | | |
| | | 750 / 0.08 | | | 1000 / 0.11 | | | 1250 / 0.15 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | |
| | | 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 |
| 75 | TC | 29.0 | 32.2 | 34.3 | 30.4 | 32.8 | 34.6 | 31.1 | 32.6 | 34.2 |
| | SHC | 25.2 | 21.5 | 17.2 | 29.0 | 23.5 | 18.0 | 31.1 | 24.7 | 18.1 |
| | kW | 2.11 | 2.14 | 2.15 | 2.28 | 2.32 | 2.33 | 2.46 | 2.58 | 2.59 |
| 85 | TC | 27.5 | 30.7 | 33.3 | 28.7 | 31.7 | 33.4 | 29.8 | 31.5 | 33.3 |
| | SHC | 24.5 | 20.9 | 16.8 | 28.1 | 23.3 | 17.6 | 29.8 | 24.4 | 18.0 |
| | kW | 2.34 | 2.38 | 2.44 | 2.52 | 2.60 | 2.62 | 2.68 | 2.87 | 2.84 |
| 95 | TC | 25.9 | 29.4 | 31.9 | 27.5 | 30.0 | 32.3 | 28.5 | 29.8 | 31.9 |
| | SHC | 23.7 | 20.4 | 16.3 | 27.5 | 22.7 | 17.2 | 28.5 | 24.3 | 17.7 |
| | kW | 2.58 | 2.65 | 2.67 | 2.78 | 2.84 | 2.85 | 2.95 | 3.09 | 3.12 |
| 105 | TC | 23.3 | 26.2 | 29.1 | 24.8 | 27.0 | 29.4 | 25.9 | 27.0 | 29.1 |
| | SHC | 22.0 | 18.7 | 15.1 | 24.8 | 31.1 | 16.0 | 25.9 | 22.9 | 16.4 |
| | kW | 2.90 | 3.00 | 3.01 | 3.07 | 3.19 | 3.20 | 3.31 | 3.43 | 3.47 |
| 115 | TC | 21.5 | 24.4 | 26.9 | 23.1 | 24.9 | 27.5 | 24.2 | 24.8 | 26.8 |
| | SHC | 21.2 | 17.9 | 14.2 | 23.1 | 20.2 | 15.2 | 24.2 | 22.0 | 15.7 |
| | kW | 3.14 | 3.28 | 3.33 | 3.39 | 3.49 | 3.48 | 3.62 | 3.74 | 3.79 |
| 125 | TC | 19.7 | 22.2 | 24.7 | 21.4 | 22.7 | 24.8 | 22.3 | 22.5 | 24.6 |
| | SHC | 19.7 | 16.8 | 13.4 | 21.4 | 19.2 | 14.3 | 22.3 | 21.0 | 14.8 |
| | kW | 3.55 | 3.69 | 3.70 | 3.78 | 3.86 | 3.89 | 4.00 | 4.10 | 4.10 |

See Legend and Notes on page 15.

PERFORMANCE DATA (cont)

COOLING CAPACITIES (cont)

| 583B036 COOLING PERFORMANCE TABLE | | | | | | | | | | |
|--|-----|--------------------------|------|------|-----------|------|------|-----------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM/BF | | | | | | | | |
| | | 900/0.09 | | | 1200/0.13 | | | 1500/0.18 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | |
| | | 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 |
| 75 | TC | 35.2 | 38.7 | 41.6 | 36.6 | 39.8 | 41.9 | 37.3 | 39.5 | 41.5 |
| | SHC | 30.3 | 25.5 | 20.7 | 34.0 | 28.0 | 21.6 | 37.3 | 29.3 | 21.6 |
| | kW | 2.58 | 2.61 | 2.61 | 2.79 | 2.84 | 2.83 | 3.03 | 3.14 | 3.14 |
| 85 | TC | 32.9 | 36.9 | 39.9 | 34.8 | 37.9 | 40.2 | 35.5 | 37.7 | 39.8 |
| | SHC | 28.7 | 24.8 | 20.1 | 33.3 | 27.4 | 21.0 | 35.5 | 28.8 | 21.1 |
| | kW | 2.83 | 2.88 | 2.89 | 3.05 | 3.11 | 3.12 | 3.28 | 3.43 | 3.43 |
| 95 | TC | 31.0 | 34.9 | 37.9 | 32.4 | 35.9 | 38.3 | 33.8 | 35.7 | 37.8 |
| | SHC | 27.9 | 24.0 | 19.3 | 30.8 | 26.7 | 20.3 | 33.8 | 28.0 | 20.5 |
| | kW | 3.11 | 3.19 | 3.20 | 3.33 | 3.42 | 3.43 | 3.56 | 3.74 | 3.73 |
| 105 | TC | 27.9 | 31.5 | 34.3 | 29.3 | 32.2 | 34.6 | 30.7 | 32.0 | 34.0 |
| | SHC | 26.0 | 22.2 | 17.7 | 28.3 | 24.8 | 18.6 | 30.7 | 26.5 | 18.7 |
| | kW | 3.49 | 3.59 | 3.60 | 3.73 | 3.82 | 3.82 | 3.97 | 4.15 | 4.13 |
| 115 | TC | 25.5 | 28.8 | 31.4 | 27.5 | 29.4 | 31.5 | 28.3 | 29.2 | 31.0 |
| | SHC | 24.7 | 21.0 | 16.5 | 27.5 | 23.4 | 17.5 | 28.3 | 25.2 | 17.6 |
| | kW | 3.85 | 3.96 | 3.96 | 4.07 | 4.19 | 4.19 | 4.34 | 4.46 | 4.51 |
| 125 | TC | 22.2 | 24.6 | 27.0 | 24.0 | 25.0 | 27.0 | 24.5 | 24.8 | 26.3 |
| | SHC | 22.2 | 19.1 | 14.8 | 24.0 | 21.5 | 15.8 | 24.5 | 23.0 | 15.8 |
| | kW | 4.48 | 4.59 | 4.61 | 4.71 | 4.79 | 4.84 | 4.98 | 5.09 | 5.15 |

| 583B042 COOLING PERFORMANCE TABLE | | | | | | | | | | |
|--|-----|--------------------------|------|------|-------------|------|------|-------------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM/BF | | | | | | | | |
| | | 1050 / 0.10 | | | 1500 / 0.13 | | | 1750 / 0.17 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | |
| | | 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 |
| 75 | TC | 40.9 | 44.6 | 48.1 | 42.3 | 45.8 | 49.1 | 43.1 | 45.9 | 48.8 |
| | SHC | 35.2 | 29.5 | 23.4 | 39.8 | 32.4 | 24.6 | 43.1 | 34.4 | 25.1 |
| | kW | 2.93 | 2.97 | 2.99 | 3.20 | 3.27 | 3.30 | 3.48 | 3.70 | 3.72 |
| 85 | TC | 38.8 | 42.7 | 46.3 | 40.4 | 43.8 | 47.1 | 41.5 | 43.9 | 46.9 |
| | SHC | 34.2 | 28.7 | 22.8 | 39.0 | 31.7 | 24.0 | 41.5 | 33.8 | 24.5 |
| | kW | 3.26 | 3.31 | 3.35 | 3.53 | 3.62 | 3.66 | 3.76 | 4.04 | 4.07 |
| 95 | TC | 36.5 | 40.7 | 44.2 | 38.1 | 41.7 | 45.0 | 39.8 | 41.6 | 44.7 |
| | SHC | 33.1 | 27.8 | 22.0 | 38.1 | 30.9 | 23.3 | 39.8 | 33.0 | 23.9 |
| | kW | 3.60 | 3.70 | 3.73 | 3.87 | 4.01 | 4.03 | 4.15 | 4.43 | 4.45 |
| 105 | TC | 31.9 | 35.8 | 39.4 | 33.9 | 36.8 | 40.0 | 35.5 | 36.5 | 39.8 |
| | SHC | 30.3 | 25.3 | 20.0 | 33.9 | 28.5 | 21.3 | 35.5 | 30.7 | 22.1 |
| | kW | 4.26 | 4.42 | 4.46 | 4.50 | 4.75 | 4.78 | 4.91 | 5.17 | 5.21 |
| 115 | TC | 28.6 | 32.0 | 35.6 | 30.8 | 32.9 | 36.0 | 32.2 | 32.7 | 35.5 |
| | SHC | 28.6 | 23.6 | 18.6 | 30.8 | 26.9 | 20.0 | 32.2 | 29.1 | 20.6 |
| | kW | 4.92 | 5.10 | 5.18 | 5.06 | 5.47 | 5.49 | 5.63 | 5.84 | 5.94 |
| 125 | TC | 25.3 | 28.4 | 32.0 | 27.8 | 29.1 | 32.1 | 29.0 | 28.9 | 31.3 |
| | SHC | 26.6 | 21.8 | 17.1 | 27.8 | 25.1 | 18.5 | 29.0 | 27.2 | 19.0 |
| | kW | 5.62 | 5.84 | 5.97 | 5.66 | 6.24 | 6.26 | 6.41 | 6.57 | 6.73 |

See Legend and Notes on page 15.

PERFORMANCE DATA (cont)

COOLING CAPACITIES (cont)

| 583B048 COOLING PERFORMANCE TABLE | | | | | | | | | | |
|--|-----|--------------------------|------|------|-------------|------|------|-------------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM/BF | | | | | | | | |
| | | 1200 / 0.06 | | | 1600 / 0.08 | | | 2000 / 0.11 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | |
| 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 | | |
| 75 | TC | 47.9 | 52.3 | 56.8 | 49.6 | 53.7 | 58.1 | 50.5 | 54.0 | 57.7 |
| | SHC | 41.5 | 34.8 | 28.2 | 47.4 | 38.7 | 29.9 | 50.5 | 41.6 | 30.7 |
| | kW | 3.38 | 3.43 | 3.48 | 3.68 | 3.78 | 3.82 | 4.01 | 4.23 | 4.27 |
| 85 | TC | 45.7 | 50.2 | 54.7 | 47.5 | 51.6 | 56.1 | 48.9 | 51.6 | 56.0 |
| | SHC | 40.4 | 34.1 | 27.4 | 46.5 | 37.9 | 29.3 | 48.9 | 40.9 | 30.3 |
| | kW | 3.77 | 3.80 | 3.86 | 4.03 | 4.16 | 4.21 | 4.36 | 4.63 | 4.68 |
| 95 | TC | 43.3 | 47.9 | 52.3 | 45.3 | 49.2 | 53.7 | 47.0 | 48.9 | 53.5 |
| | SHC | 39.1 | 33.1 | 26.5 | 45.3 | 37.1 | 28.5 | 47.0 | 39.9 | 29.5 |
| | kW | 4.15 | 4.23 | 4.28 | 4.41 | 4.57 | 4.63 | 4.78 | 5.07 | 5.11 |
| 105 | TC | 39.2 | 43.7 | 47.9 | 41.5 | 44.6 | 48.9 | 42.9 | 44.3 | 48.9 |
| | SHC | 36.4 | 30.8 | 24.6 | 41.5 | 34.6 | 26.4 | 42.9 | 37.5 | 27.6 |
| | kW | 4.67 | 4.79 | 4.82 | 4.93 | 5.14 | 5.19 | 5.34 | 5.60 | 5.66 |
| 115 | TC | 35.3 | 39.6 | 43.7 | 38.2 | 40.3 | 44.3 | 39.3 | 40.1 | 44.0 |
| | SHC | 34.4 | 29.0 | 23.0 | 38.2 | 32.8 | 24.7 | 39.3 | 35.7 | 26.0 |
| | kW | 5.32 | 5.50 | 5.54 | 5.65 | 5.85 | 5.89 | 6.06 | 6.27 | 6.36 |
| 125 | TC | 32.0 | 35.2 | 38.7 | 34.4 | 35.5 | 39.3 | 35.0 | 35.2 | 38.8 |
| | SHC | 32.0 | 27.0 | 21.0 | 34.4 | 30.8 | 22.8 | 35.0 | 33.4 | 24.0 |
| | kW | 6.16 | 6.31 | 6.34 | 6.47 | 6.63 | 6.69 | 6.89 | 7.04 | 7.16 |

| 583B060 COOLING PERFORMANCE TABLE | | | | | | | | | | | | | |
|--|-----|--------------------------|------|------|-------------|------|------|-------------|------|------|-------------|------|------|
| Temp (F) Outdoor Air Entering Condenser | | Evaporator Air — CFM/BF | | | | | | | | | | | |
| | | 1500 / 0.05 | | | 1750 / 0.06 | | | 2000 / 0.07 | | | 2500 / 0.08 | | |
| | | Evaporator Air — Ewb (F) | | | | | | | | | | | |
| 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 | 62 | 67 | 72 | | |
| 75 | TC | 57.6 | 64.3 | 69.9 | 59.8 | 66.1 | 71.7 | 61.7 | 67.6 | 73.1 | 65.0 | 69.6 | 75.1 |
| | SHC | 50.6 | 43.0 | 34.4 | 55.5 | 46.2 | 36.3 | 59.8 | 49.3 | 38.1 | 65.0 | 54.8 | 41.3 |
| | kW | 4.63 | 4.69 | 4.75 | 4.67 | 4.71 | 4.78 | 4.68 | 4.73 | 4.80 | 4.70 | 4.75 | 4.84 |
| 85 | TC | 54.4 | 60.9 | 67.0 | 56.4 | 63.0 | 68.6 | 58.0 | 64.5 | 69.9 | 62.3 | 66.4 | 71.6 |
| | SHC | 49.0 | 41.6 | 33.4 | 53.6 | 45.0 | 35.2 | 58.0 | 48.2 | 37.0 | 62.3 | 54.0 | 40.2 |
| | kW | 5.06 | 5.17 | 5.21 | 5.10 | 5.17 | 5.23 | 5.14 | 5.18 | 5.26 | 5.17 | 5.21 | 5.29 |
| 95 | TC | 51.2 | 57.5 | 63.7 | 53.1 | 59.4 | 65.3 | 55.1 | 60.7 | 66.5 | 59.3 | 62.7 | 68.1 |
| | SHC | 47.5 | 40.0 | 32.2 | 51.9 | 43.5 | 34.0 | 55.1 | 46.8 | 35.8 | 59.3 | 52.8 | 39.1 |
| | kW | 5.54 | 5.68 | 5.72 | 5.58 | 5.68 | 5.74 | 5.64 | 5.69 | 5.76 | 5.68 | 5.71 | 5.79 |
| 105 | TC | 45.8 | 51.9 | 57.7 | 47.8 | 53.4 | 59.1 | 50.2 | 54.6 | 60.1 | 53.8 | 56.2 | 61.4 |
| | SHC | 44.0 | 37.0 | 29.5 | 47.8 | 40.3 | 31.4 | 50.2 | 43.4 | 33.1 | 53.8 | 49.3 | 36.2 |
| | kW | 6.17 | 6.35 | 6.39 | 6.23 | 6.36 | 6.41 | 6.30 | 6.37 | 6.42 | 6.36 | 6.38 | 6.44 |
| 115 | TC | 41.9 | 47.6 | 53.2 | 44.5 | 49.0 | 54.4 | 46.8 | 50.1 | 55.2 | 50.0 | 51.6 | 56.5 |
| | SHC | 41.9 | 35.1 | 27.8 | 44.5 | 38.3 | 29.6 | 46.8 | 41.5 | 31.3 | 50.0 | 47.1 | 34.5 |
| | kW | 6.75 | 6.94 | 6.98 | 6.83 | 6.95 | 6.99 | 6.82 | 6.95 | 7.01 | 6.94 | 6.95 | 7.03 |
| 125 | TC | 38.6 | 43.2 | 48.3 | 41.1 | 44.5 | 49.4 | 43.1 | 45.4 | 50.0 | 46.0 | 46.7 | 51.0 |
| | SHC | 38.6 | 33.2 | 25.8 | 41.1 | 36.3 | 27.6 | 43.1 | 39.3 | 29.1 | 46.0 | 44.5 | 32.1 |
| | kW | 7.36 | 7.64 | 7.67 | 7.58 | 7.64 | 7.68 | 7.63 | 7.64 | 7.69 | 7.64 | 7.65 | 7.71 |

LEGEND

BF – Bypass Factor
Ewb – Entering Wet-Bulb
kW – Total Unit Power Input
SHC – Net Sensible Heat Capacity (1000 Btuh)
TC – Net Cooling Capacity (1000 Btuh)

NOTES:

1. Ratings are net; they do account for the effects of the evaporator-fan motor power and heat.
2. Direct interpolation is permissible. Do not extrapolate.
3. The following formulas may be used:

$$t_{l_{db}} = t_{e_{db}} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$t_{l_{wb}}$ = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil ($h_{l_{wb}}$)

$$h_{l_{wb}} = h_{e_{wb}} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: $h_{e_{wb}}$ = Enthalpy of air entering evaporator coil

WET COIL AIR DELIVERY* — HORIZONTAL AND DOWNFLOW DISCHARGE

Unit 583B024-060 (Deduct 10% for 208 Volts)

230 AND 460 VOLT

| Unit 583B | Motor Speed | External Static Pressure (in. wg) | | | | | | | | | | |
|--------------|----------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|
| | | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| 024 | Low | Watts | 279 | 282 | 280 | 277 | 276 | — | — | — | — | — |
| | | CFM | 882 | 801 | 738 | 674 | 604 | — | — | — | — | — |
| | Med | Watts | — | — | — | 373 | 367 | 361 | 356 | 351 | — | — |
| | | CFM | — | — | — | 936 | 868 | 797 | 719 | 626 | — | — |
| 030 | High | Watts | — | — | — | — | — | 463 | 452 | 439 | 428 | — |
| | | CFM | — | — | — | — | — | 956 | 878 | 794 | 702 | — |
| | Low | Watts | 243 | 244 | 242 | — | — | — | — | — | — | — |
| | | CFM | 885 | 842 | 786 | — | — | — | — | — | — | — |
| 036 | Med | Watts | 353 | 339 | 333 | 330 | 326 | 320 | — | — | — | — |
| | | CFM | 1195 | 1134 | 1070 | 997 | 911 | 818 | — | — | — | — |
| | High | Watts | — | — | — | 443 | 436 | 426 | 416 | 406 | 397 | — |
| | | CFM | — | — | — | 1230 | 1145 | 1061 | 977 | 888 | 786 | — |
| 042 | Low | Watts | 490 | 463 | 446 | 432 | 418 | 403 | 389 | 378 | — | — |
| | | CFM | 1431 | 1398 | 1347 | 1281 | 1205 | 1118 | 1024 | 921 | — | — |
| | Med | Watts | — | 513 | 501 | 488 | 474 | 459 | 443 | 428 | — | — |
| | | CFM | — | 1491 | 1426 | 1351 | 1267 | 1175 | 1077 | 976 | — | — |
| 048 | High | Watts | — | — | 645 | 636 | 627 | 616 | 605 | 593 | 583 | — |
| | | CFM | — | — | 1484 | 1410 | 1330 | 1243 | 1147 | 1044 | 936 | — |
| | Low | Watts | 634 | 618 | 608 | 598 | 583 | 562 | 534 | 502 | 473 | 454 |
| | | CFM | 1669 | 1599 | 1545 | 1498 | 1448 | 1391 | 1326 | 1257 | 1189 | 1132 |
| 060 | Med | Watts | — | — | — | 733 | 704 | 672 | 638 | 604 | 574 | 550 |
| | | CFM | — | — | — | 1746 | 1688 | 1630 | 1566 | 1492 | 1399 | 1279 |
| | High | Watts | — | — | — | — | — | — | 797 | 773 | 751 | 727 |
| | | CFM | — | — | — | — | — | — | 1727 | 1632 | 1537 | 1423 |

*Air delivery values are without air filter.

NOTE: Deduct field-supplied air filter pressure drop to obtain external static pressure available for ducting.

FILTER PRESSURE DROP (In. wg)

| FILTER SIZE | CFM | | | | | | | | | | | | | | | | | |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 |
| 20 X 20 X 1 | 0.05 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.14 | 0.15 | — | — | — | — | — | — | — | — | — | — |
| 20 X 24 X 1 | — | — | — | — | 0.09 | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | — | — | — | — | — | — | — |
| 24 X 30 X 1 | — | — | — | — | — | — | — | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.15 | 0.16 | 0.17 |
| | | | | | | | | | | | | | | | | | | 0.18 |

PERFORMANCE DATA (CONT)

ECONOMIZER/1-IN. FILTER PRESSURE DROP (in. wg)

| UNIT 583B | PRESSURE DROP |
|-----------|---------------|
| 024-036 | 0.20 |
| 042-060 | 0.25 |

HIGH ALTITUDE COMPENSATION

NATURAL GAS ONLY

ORIFICE CONVERSION — 3.5 in. wg MANIFOLD PRESSURE*

| ALTITUDE (ft) | INPUT (Btuh) | OUTPUT (Btuh) | ORIFICE NUMBER† |
|---------------|-----------------|------------------|--------------------|
| 0-2000 | 40,000 | 31,000 | #44 |
| | 60,000 | 46,000 | #38 |
| | 90,000 | 70,000 | #38 |
| | 115,000 | 92,000 | #33 |
| | 130,000 | 103,000 | #31 |
| 2001-4500 | 33,290 | 25,800 | #49 |
| | 49,930 | 38,300 | #43 |
| | 74,900 | 58,270 | #43 |
| | 95,700 | 76,560 | #38 |
| | 108,180 | 85,680 | #36 |
| 4501-6000 | 31,310 | 24,270 | #50 |
| | 46,970 | 36,030 | #44 |
| | 70,450 | 54,810 | #44 |
| | 90,020 | 71,300 | #40 |
| | 101,760 | 80,590 | #37 |

*As the height above sea level increases, there is less oxygen per cubic ft of air.

Therefore heat input rate should be reduced at higher altitudes.

†Orifices available through your Bryant distributor.

LIQUID PROPANE ONLY

ORIFICE CONVERSION — 3.5 in. wg MANIFOLD PRESSURE*

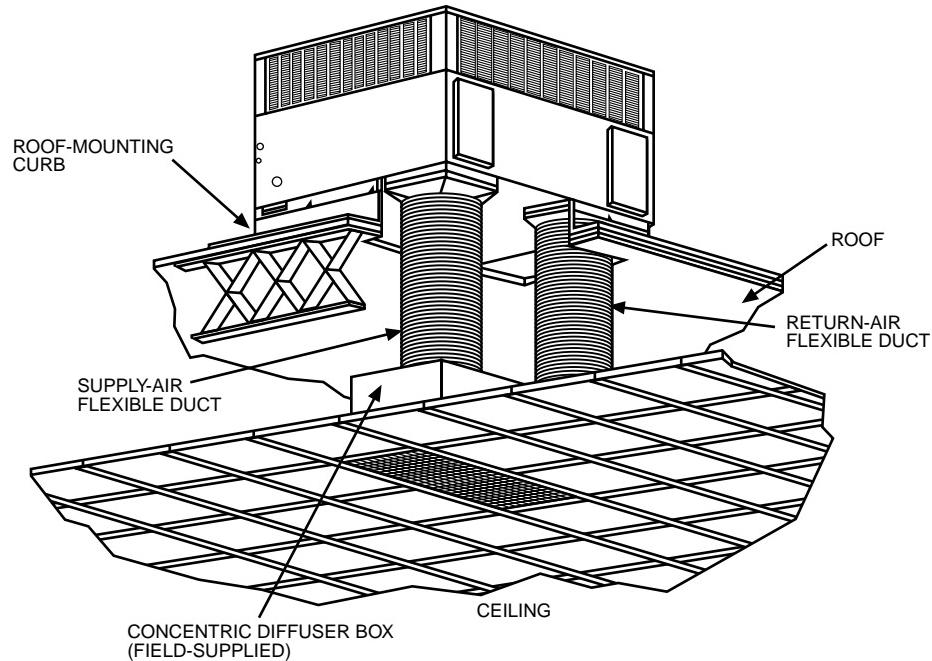
| ALTITUDE (ft) | INPUT (Btuh) | OUTPUT (Btuh) | ORIFICE NUMBER† |
|---------------|-----------------|------------------|---------------------------------|
| 0-2000 | 40,000 | 31,000 | #50 |
| | 57,000 | 43,720 | #46 |
| | 85,500 | 66,520 | #46 |
| | 115,000 | 92,000 | #42 |
| | 127,000 | 100,580 | #41 |
| 2001-4500 | 33,290 | 25,800 | #53 |
| | 47,430 | 36,380 | #50 |
| | 71,150 | 55,350 | #50 |
| | 95,700 | 76,560 | #45 |
| | 105,690 | 83,710 | #44 |
| 4501-6000 | 31,310 | 24,270 | NOT TO BE USED ABOVE 4500 FT |
| | 44,620 | 34,220 | #51 |
| | 66,930 | 52,070 | #51 |
| | 90,020 | 72,020 | #47 |
| | 99,410 | 78,520 | #45 |

*As the height above sea level increases, there is less oxygen per cubic ft of air.

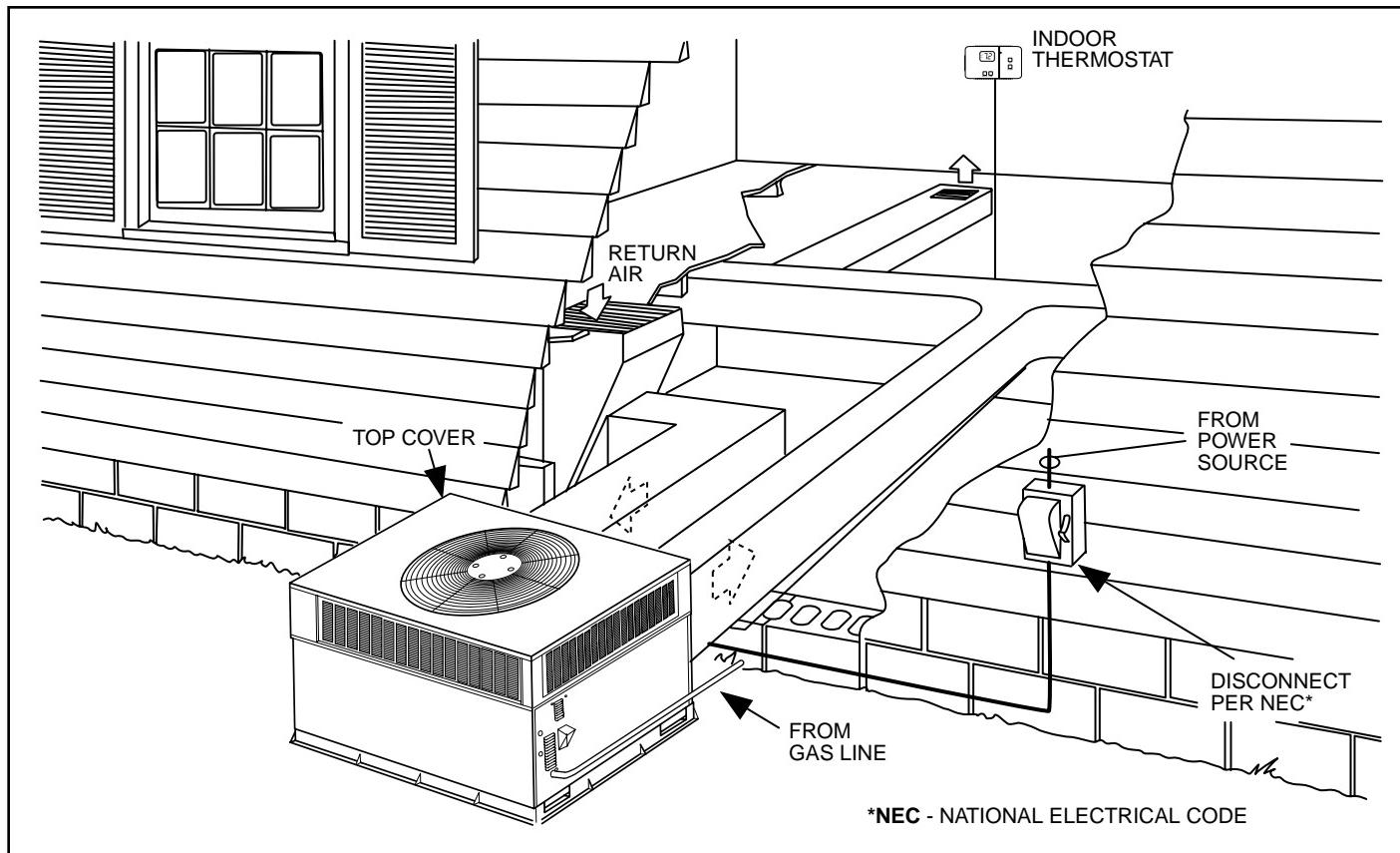
Therefore, heat input rate should be reduced at higher altitudes.

†Orifices available through your Bryant distributor.

TYPICAL PIPING AND WIRING



C00023



C00022

APPLICATION DATA

Condensate trap — A 2-in. condensate trap must be field supplied.

Ductwork — Secure downflow discharge ductwork to roof curb. For horizontal discharge applications, attach ductwork to unit with flanges.

To convert a unit to downflow discharge — Units are equipped with factory-installed inserts in the down-flow openings. Removal of the inserts is similar to removing an electrical knock-out. The unit is factory equipped with duct covers to seal the horizontal discharge openings in the unit. Units installed in horizontal discharge orientation do not require duct covers.

Maximum cooling airflow — To minimize the possibility of condensate blow-off from the evaporator, airflow through the units should not exceed 450 cfm per ton.

Minimum cooling airflow — The minimum cooling airflow is 350 cfm per ton.

Minimum cooling ambient operating temperature — All standard units have a minimum cooling ambient operating temperature of 40°F. With accessory low ambient temperature kit, units can operate at temperatures down to 0°F.

ELECTRICAL DATA

| UNIT SIZE 583B | V-PH-Hz | VOLTAGE RANGE | | COMPRESSOR | | OUTDOOR FAN MOTOR | INDOOR FAN MOTOR | POWER SUPPLY | |
|----------------------|--------------|------------------|-----|------------|-------|----------------------|---------------------|--------------|--------------------|
| | | Min | Max | RLA | LRA | FLA | FLA | MCA | MAX FUSE OR BKR |
| 024 | 208/230-1-60 | 187 | 253 | 13.5 | 61.0 | 0.8 | 2.0 | 19.7 | 30 |
| 030 | 208/230-1-60 | 187 | 253 | 14.7 | 73.0 | 0.8 | 2.1 | 21.3 | 35 |
| | 208/230-3-60 | 187 | 253 | 9.6 | 63.0 | 0.8 | 2.1 | 14.9 | 20 |
| 036 | 208/230-1-60 | 187 | 253 | 15.4 | 83.0 | 0.8 | 3.6 | 23.7 | 35 |
| | 208/230-3-60 | 187 | 253 | 12.2 | 77.0 | 0.8 | 3.6 | 19.7 | 30 |
| | 460-3-60 | 414 | 506 | 5.1 | 35.0 | 0.8 | 1.9 | 9.1 | 15 |
| 042 | 208/230-1-60 | 187 | 253 | 18.6 | 105.0 | 1.6 | 4.1 | 29.0 | 45 |
| | 208/230-3-60 | 187 | 253 | 13.8 | 88.0 | 1.6 | 4.1 | 23.0 | 35 |
| | 460-3-60 | 414 | 506 | 6.3 | 39.0 | 0.9 | 2.0 | 10.8 | 15 |
| 048 | 208/230-1-60 | 187 | 253 | 20.5 | 109.0 | 1.6 | 4.1 | 31.3 | 50 |
| | 208/230-3-60 | 187 | 253 | 14.7 | 91.0 | 1.6 | 4.1 | 24.1 | 35 |
| | 460-3-60 | 414 | 506 | 6.5 | 46.0 | 0.9 | 2.0 | 11.0 | 15 |
| 060 | 208/230-1-60 | 187 | 253 | 27.6 | 158.0 | 1.6 | 6.2 | 42.3 | 60 |
| | 208/230-3-60 | 187 | 253 | 18.1 | 137.0 | 1.6 | 6.2 | 30.4 | 45 |
| | 460-3-60 | 414 | 506 | 9.0 | 62.0 | 0.9 | 3.2 | 15.4 | 20 |

LEGEND

FLA — Full Load Amps
 LRA — Locked Rotor Amps
 MCA — Minimum Circuit Amps
 MOCP — Maximum Overcurrent Protection
 RLA — Rated Load Amps



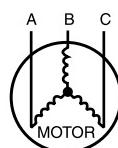
NOTES:

- In compliance with NEC (National Electrical Code) requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be Power Supply fuse. The CGA (Canadian Gas Association) units may be fuse or circuit breaker.
- Minimum wire size is based on 60 C copper wire. If other than 60 C wire is used, or if length exceeds wire length in table, determine size from NEC.
- Unbalanced 3-Phase Supply Voltage
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

% Voltage imbalance

$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

EXAMPLE: Supply voltage is 460-3-60.



$$\begin{aligned} AB &= 452 \text{ v} \\ BC &= 464 \text{ v} \\ AC &= 455 \text{ v} \\ \text{Average Voltage} &= \frac{452 + 464 + 455}{3} \\ &= \frac{1371}{3} \\ &= 457 \end{aligned}$$

Determine maximum deviation from average voltage.

$$\begin{aligned} (AB) 457 - 452 &= 5 \text{ v} \\ (BC) 464 - 457 &= 7 \text{ v} \\ (AC) 457 - 455 &= 2 \text{ v} \end{aligned}$$

Maximum deviation is 7 v.

Determine percent of voltage imbalance.

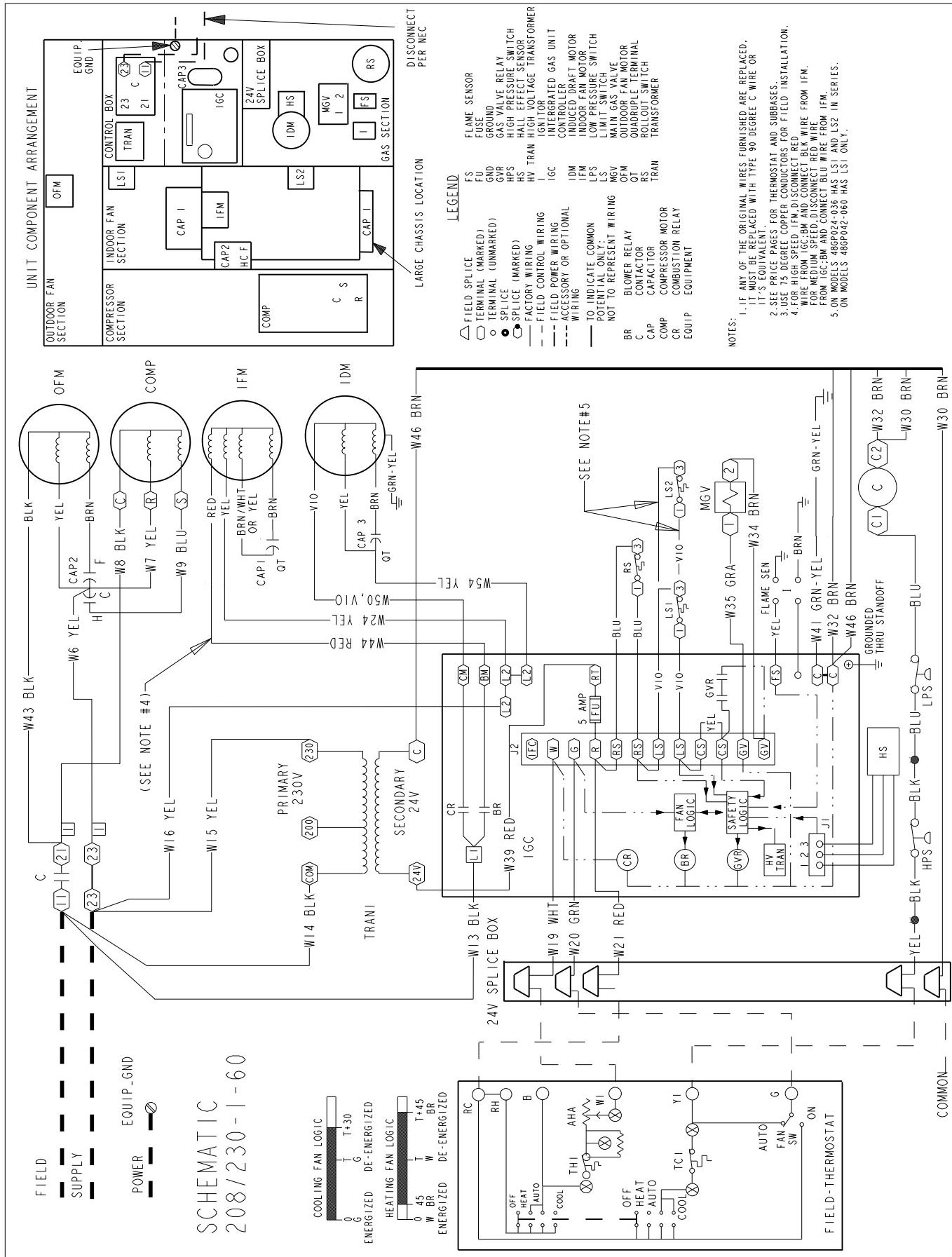
$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{7}{457} \\ &= 1.53\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

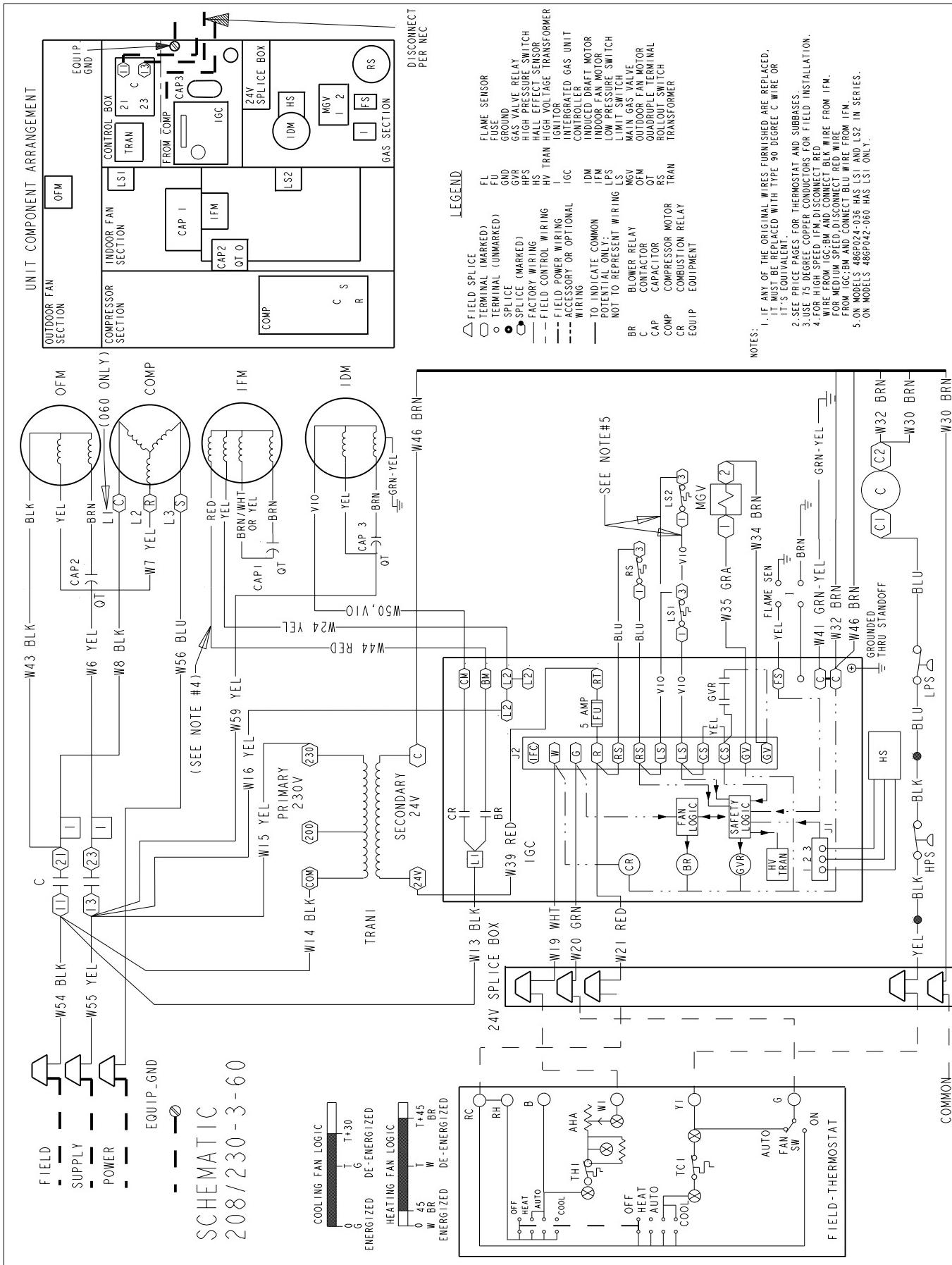
IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

C99024

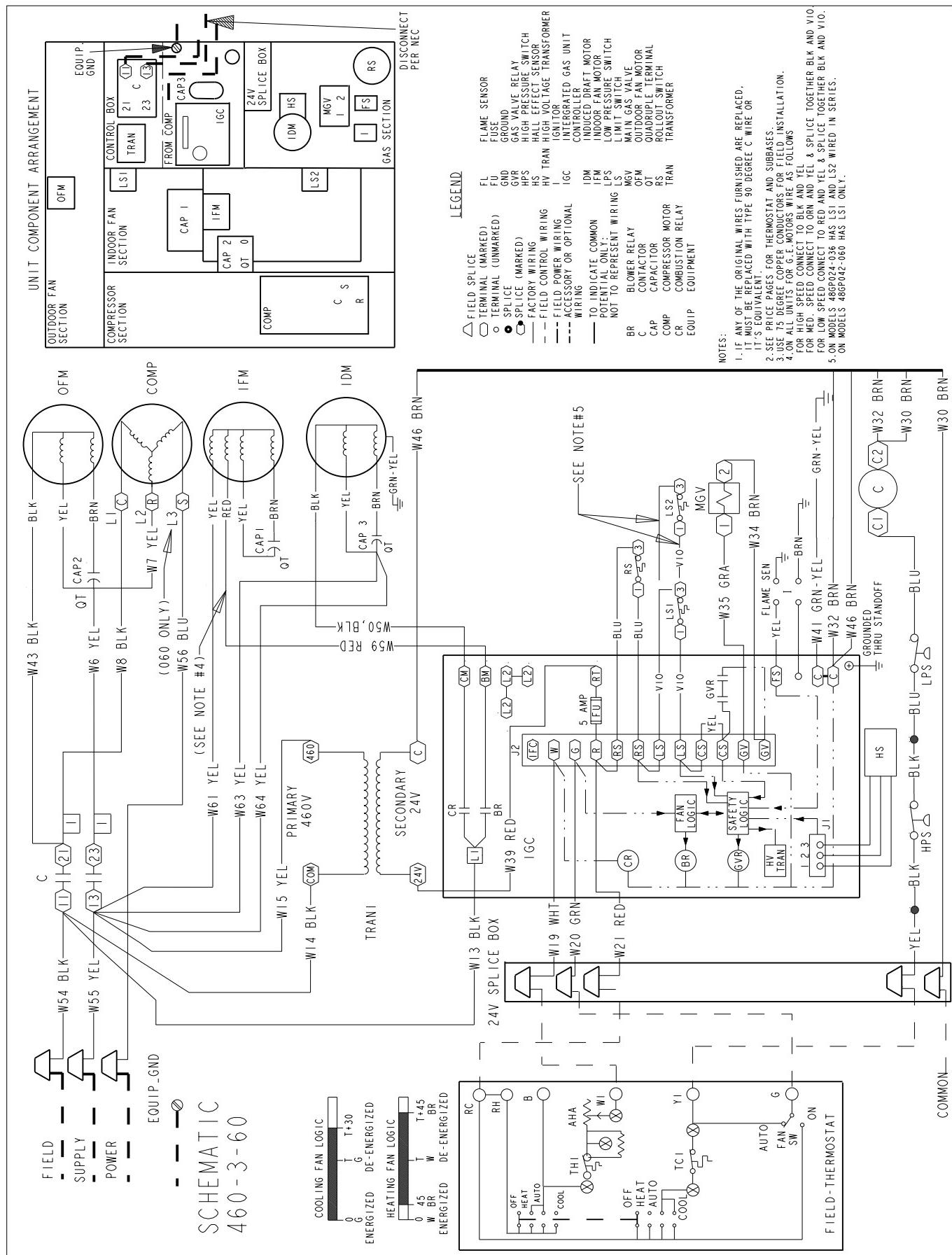
TYPICAL WIRING SCHEMATIC—208/230-1-60 SHOWN



TYPICAL WIRING SCHEMATIC—208/230-3-60 SHOWN



TYPICAL WIRING SCHEMATIC—460-3-60 SHOWN



CONTROLS

OPERATING SEQUENCE

Heating — On a call for heating, terminal "W" of the thermostat is energized, starting the induced-draft motor. When the hall-effect sensor on the induced-draft motor senses that it has reached the required speed, the burner sequence begins. This function is performed by the integrated gas control (IGC). The evaporator fan motor is energized 45 seconds after flame is established. When the thermostat is satisfied and "W" is de-energized, the burners stop firing and the evaporator fan motor shuts off after a 45-second time-off delay.

Cooling — When the room temperature rises to a point that is slightly above the cooling control setting of the thermostat, the thermostat completes the circuit between thermostat terminal R to terminals Y and G. These completed circuits through the thermostat connect contactor coil (C) (through unit wire Y) and blower relay coil (BR) (through unit wire G) across the 24-v secondary of transformer (TRAN).

The normally open contacts of energized contactor (C) close and complete the circuit through compressor motor (COMP) to condenser (outdoor) fan motor (OFM). Both motors start instantly.

The set of normally open contacts of energized relay BR close and complete the circuit through evaporator blower (indoor) fan motor (IFM).

NOTE: Once the compressor has started and then has stopped, it should not be started again until 5 minutes have elapsed.

The cooling cycle remains "on" until the room temperature drops to a point that is slightly below the cooling control setting of the room thermostat. At this point, the thermostat "breaks" the circuit between thermostat terminal R to terminals Y and G. These open circuits de-energize contactor coil C and relay coil BR. The condenser and compressor motors stop. After a 30-second delay, the blower motor stops. The unit is in a "standby" condition, waiting for the next "call for cooling" from the room thermostat.

GUIDE SPECIFICATIONS

**PACKAGED GAS HEATING/ELECTRIC COOLING
UNITS CONSTANT VOLUME APPLICATION**
HVAC GUIDE SPECIFICATIONS
SIZE RANGE: 2 TO 5 TONS, NOMINAL COOLING
40,000 TO 130,000 BTUH,
NOMINAL HEATING INPUT

BRYANT MODEL NUMBER: 583B

PART 1 — GENERAL

1.01 SYSTEM DESCRIPTION

Outdoor rooftop mounted, gas heating/electric cooling unit utilizing a scroll compressor for cooling duty. Unit shall discharge supply air vertically or horizontally as shown on contract drawings. Condenser fan/coil section shall have a draw-thru design with vertical discharge for minimum sound levels.

1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with ARI Standards 210/240-94 and 270-95 (Sound ratings for 270-95 are not listed with ARI).
- B. Unit shall be designed in accordance with UL Standard 1995.
- C. Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard.
- D. Unit shall be UL listed and certified under Canadian Standards as a total package for safety requirements.
- E. Roof curb shall be designed to conform to NRCA Standards.
- F. Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation.
- G. Cabinet insulation shall meet ASHRAE Standard 62P.

1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

PART 2 — PRODUCTS

2.01 EQUIPMENT

A. General:

Factory-assembled, single-piece, heating and cooling unit. Contained within the enclosure shall be all factory wiring, piping, controls, refrigerant charge with R-410A refrigerant, and special features required prior to field start-up.

B. Unit Cabinet:

1. Unit Cabinet shall be constructed of phosphated, zinc-coated, pre-painted steel capable of withstanding 500 hours in salt spray.
2. Normal service shall be through a single removable cabinet panel.
3. The unit shall be constructed on a rust proof basepan that has an externally trapped, integrated sloped drain pan.
4. Evaporator fan compartment top surface shall be insulated with a minimum 1/2-in. thick, flexible fiberglass insulation, coated on the air side and retained by adhesive and mechanical means. The evaporator wall sections will be insulated with a minimum semi-rigid foil-faced board capable of being wiped clean. Aluminum foil-faced fiberglass insulation shall be used in the entire indoor air cavity section.
5. Unit shall have a field-supplied condensate trap.

C. Fans:

1. The evaporator fan shall be 3-speed, direct-drive, as shown on equipment drawings.
2. Fan wheel shall be made from steel, and shall be double-inlet type with forward curved blades with corrosion resistant finish. Fan wheel shall be dynamically balanced.
3. Condenser fan shall be direct drive propeller type with aluminum blades riveted to corrosion resistant steel spiders, be dynamically balanced, and discharge air vertically.

D. Compressor:

1. Fully hermetic compressors with factory-installed vibration isolation.
2. Scroll compressors shall be standard on all units.

E. Coils:

Evaporator and condenser coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. (Copper/copper and vinyl-coated construction available as option). Tube sheet openings shall be belled to prevent tube wear.

F. Heating Section:

1. Induced-draft combustion type with energy saving direct spark ignition system and redundant main gas valve.
2. Induced-draft motors shall be provided with solid-state hall-effect sensor to ensure adequate airflow for combustion.
3. The heat exchangers shall be constructed of aluminized steel for corrosion resistance.
4. Burners shall be of the in-shot type constructed of aluminum coated steel.
5. All gas piping and electric power shall enter the unit cabinet at a single location.

G. Refrigerant Components:

Refrigerant expansion shall be of the fixed orifice type.

H. Filters:

Filter section shall consist of field-installed, throwaway, 1-in. thick fiberglass filters of commercially available sizes.

I. Controls and Safeties:

1. Unit controls shall be complete with a self-contained low voltage control circuit.
2. Compressors shall incorporate a solid-state compressor protector that provides reset capability.
3. Unit shall provide high and low-of-charge/low pressure safety protection.

J. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F ambient outdoor temperature exceeding maximum load criteria of ARI Standard 210.
2. Compressor with standard controls shall be capable of operation down to 40 F ambient outdoor temperature.
3. Units shall be provided with fan time delay to prevent cold air delivery before the heat exchanger warms up.
4. Unit shall be provided with 30-second fan time delay after the thermostat is satisfied.

GUIDE SPECIFICATIONS continued

K. Electrical Requirements:

All unit power wiring shall enter the unit cabinet at a single location.

L. Motors:

1. Compressor motors shall be of the refrigerant-cooled type with line-break thermal and current overload protection.
2. All fan motors shall have permanently lubricated bearings, and inherent, automatic reset, thermal overload protection.
3. Condenser fan motor shall be totally enclosed.

M. Grille:

1. Louvered Grille:

Louvered grille shall be factory-installed to provide hail guard and vandalism protection.

N. Duct Conversion Kit:

Shall enable conversion of a factory supplied side discharge unit to downflow discharge airflow unit.

O. Special Features:

1. Coil Options:

Shall include factory-installed optional copper/copper and vinyl-coated refrigerant coils.

2. Economizer:

- a. Economizer controls capable of providing free cooling using outside air.
- b. Equipped with low leakage dampers not to exceed 3% leakage, at 1.0 in. wg pressure differential.
- c. Spring return motor shuts off outdoor damper on power failure.

3. Flat Roof Curb:

Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.

4. Manual Outdoor Air Damper:

Package shall consist of damper, birdscreen, and rain hood which can be preset to admit outdoor air for year-round ventilation.

5. Thermostat:

To provide for one-stage heating and cooling in addition manual or automatic changeover and indoor fan control.

6. Natural-to-Propane Conversion Kit:

Shall be complete with all required hardware to convert to liquid propane (LP) operation.

7. Low Ambient Package:

Shall consist of a solid-state control and condenser coil temperature sensor for controlling condenser-fan motor operation, which shall allow unit to operate down to 0° F outdoor ambient temperature.

8. Filter Rack Kit:

Shall provide filter mounting for downflow applications.

9. Square-To-Round Duct Transitions:

Shall have the ability to convert the supply and return openings from rectangular to round.

10. Compressor Protection:

Solid-state control shall protect compressor by preventing "short cycling."

11. Crankcase Heater:

Shall provide anti-floodback protection for low-load cooling applications.

12. High Altitude Kit:

Shall consist of natural gas orifices to compensate for gas heat operation at 2001 to 6000 ft above sea level.

13. Low NO_x: (Natural Gas only)

Shall provide NO_x reduction to values below 40 nanograms/joule to meet California emission requirements.

14. Compressor Hard Start Kit:

Shall provide additional starting torque for single-phase compressors.

15. Rigging kit includes lifting brackets which are inserted into the basepan handholds to rig unit for rooftop applications.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS

Cancels: PDS 583B.24.1

Form PDS 583B.24.2